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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/659,914	09/11/2000	Aljosa Vrancic	5150-39400	5713

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EXAMINER

CHEN, ALAN S

ART UNIT	PAPER NUMBER
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2182

DATE MAILED: 12/16/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/659,914

Applicant(s)

VRANCIC ET AL.

Examiner

Alan S Chen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 14-21, 24, 30 and 31 is/are rejected.
- 7) ☒ Claim(s) 6-13, 22, 23 and 25-29 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 September 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 904, 906, 912 and 914. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities: spelling of the word "remote" on page 20, line 5. Replace "buffer/emote" with buffer/remote".

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-5, 14-21, 24, 30 and 31 rejected under 35 USC 103(a) as being unpatentable over No. 5,659,749 to Mitchell et al. (hereafter Mitchell) in view of No. 6,006,286 to Baker et al. (hereafter Baker).

5. As per claim 1, Mitchell discloses a method for transferring data (Fig. 3) in a system including a host computer (Fig. 3, element 102) coupled through a communication medium (Fig. 3, element 106) to a DAQ device (Fig. 3, element 104), the method comprising: configuring a

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data acquisition device for a data I/O operation (configured through the host computer expansion card, Fig. 3, element 108); the host computer transferring a plurality of data between the DAQ device and the host computer; the DAQ device (Fig. 3, element 104) executing the plurality of transfer commands from the link buffer to transfer data between a data buffer (the link buffer is the data queue, part of the DMA transfer logic, described in Column 5, lines 28-50) in the data acquisition device and the host memory (Fig. 3, element 204). Mitchell discloses the data acquisition device initiating the data I/O operation by requesting data from the host. Furthermore, Mitchell discloses a DMA engine (Fig. 3, element 221) in the DAQ device.

Mitchell does not disclose expressly the host computer preparing a plurality of transfer links wherein each of the plurality of transfer links specifies a transfer of data between the DAQ device and the host computer.

Baker discloses a method of transferring data in a system (Fig. 1) including a host computer system (Fig. 1, element 12) coupled over a serial bus (1394 serial bus) to a data acquisition device (Fig. 1, element 52, acquiring image data), the method comprising: the host computer preparing a plurality of transfer links (Fig. 20), wherein each of the plurality of transfer links specifies a transfer of data between the data acquisition device and the host computer (Fig. 20, elements 456, 470 and 486).

Mitchell and Baker are analogous art because they are from the same field of endeavor in transferring data over a detachable link/cable.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify Mitchell with Baker to use the transfer link data structure.

The suggestion/motivation for doing so would have been to provide the advantage of using a minimal number of input and output accesses to the data transfer device memory (Column 3) thereby increasing efficiency and performance of the system.

Therefore, it would have been obvious to combine Baker with Mitchell for the benefit of minimizing the number of input and output accesses to the data transfer device memory.

6. As per claim 16, Mitchell discloses a system for transferring data over a communication medium (Fig. 3), the system comprising: a data acquisition device (Fig. 3, element 104) coupled to a first end of the communication medium (Fig. 3, element 106); and a host computer system (Fig. 3, element 102) coupled to a second end of the communication medium (Fig. 3, 106), wherein the host computer is operable to communicate through the communication medium to the data acquisition device; wherein the host computer system is operable to prepare a plurality of transfer commands (Fig. 3, element 108) and transfer the commands to the link buffer (Column 5, lines 28-50) in a double buffered fashion (link buffer can hold more than one command), wherein each of the plurality of transfer commands specifies a transfer of data between the data acquisition device and the host computer.

Baker discloses a system for transferring data over a communication medium (Fig. 1) the system comprising the host computer preparing a plurality of transfer links (Fig. 20), wherein each of the plurality of transfer links specifies a transfer of data between the data acquisition device and the host computer (Fig. 20, elements 456, 470 and 486).

Mitchell and Baker are analogous art because they are from the same field of endeavor in transferring data over a detachable link/cable.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify Mitchell with Baker to use the transfer link data structure.

The suggestion/motivation for doing so would have been to provide the advantage of using a minimal number of input and output accesses to the data transfer device memory (Column 3) thereby increasing efficiency and performance of the system.

Therefore, it would have been obvious to combine Baker with Mitchell for the benefit of minimizing the number of input and output accesses to the data transfer device memory.

7. As per claims 2 and 17, Mitchell further disclose the bi-directional nature of the transfers between the host and DAQ device, where transferring data from the host to the DAQ device requires a request/fetch from the DAQ device.

8. As per claims 3 and 18, Mitchell further discloses the buffer queue having the ability to store a plurality of transfer commands (Column 5, lines 28-50), thereby providing a double or more buffering mechanism.

9. As per claims 14, 15, 30 and 31, Mitchell combined with Baker disclose claims 3 and 16. Baker further discloses use of IEEE 1394 bus (Fig. 1) and using the PCI protocol for part of the hardware interface. Furthermore, to bridge the PCI and 1394 protocol, the system uses a PCI/1394 translator (Fig. 1, element 18 and 20).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify Mitchell with Baker to use 1394 and PCI protocols.

The suggestion/motivation for doing so would have been the PCI local bus is the de facto standard in current personal computers while IEEE 1394 is very popular currently since it

provides high transfer speeds and is advanced relative to the other serial data links that currently exist (Column 1, lines 30-45).

Therefore, it would have been obvious to combine Baker with Mitchell for the benefit of going with established and quality communication buses.

10. As per claim 19, Mitchell further discloses the system of claim 18, wherein the host computer system is further operable to: configure the DAQ for I/O (Fig. 3, element 108) and initiate a data I/O operation on the DAQ device, after the host computer transfers to it data.

11. As per claims 4, 5, 20 and 21, Mitchell further discloses the methods of claims 3 and 19, wherein the host computer being operable to initiate the data I/O operation (Fig. 3, element 108) comprising the host computer being operable to a DAQ process on the DAQ device; wherein the data acquisition device comprises a DMA controller (Fig. 5, element 221); and wherein the DAQ device being capable of executing a plurality of commands (Column 5, lines 28-50) being able to transmit and receive data. The DAQ device (Fig. 5) receives the data from the expansion card (Fig. 4) and processing/notification is done by the DMA transfer logic (Fig. 5, element 221).

12. As per claim 24, Mitchell combined with Baker disclose the system of claim 16, wherein each link comprises one source address (Fig. 20, element 474), a count of the number of bytes in the transfer (Fig. 20, element 466, address 0x24), and a pointer to a subsequent link (Fig. 20, element 466, address 0x0).

Allowable Subject Matter

13. Claims 6-13 and 25-29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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14. The following is the statement of reasons for the indication of allowable subject matter: The prior art disclosed by the applicant and cited by the Examiner fail to teach or suggest, alone or in combination, a data acquisition device that executes part of the transfer link that is sent to the DAQ device while the other part is still on the host side, and once another part of the transfer link is transferred, thereupon executing an already transferred transfer link.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents are cited to further show the state of the art with respect to :

U.S. Pat. No. 5,640,399 to Rostoker et al.

U.S. Pat. No. 6,167,465 to Parvin et al.

U.S. Pat. No. 6,177,895 to Vrancic et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan S Chen whose telephone number is 703-605-0708. The examiner can normally be reached on M-F 8:30am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey A Gaffin can be reached on 703-308-3301. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

ASC
12/10/2003


JEFFREY GAFFIN
SUPERVISOR, PATENT EXAMINER
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